

What is claimed is:

1. In a method of monitoring a network which comprises a plurality of packet switches and a network management system for managing the packet switches, a packet switch placed on one end boundary of the network, performing the following steps:

detecting the start of communication in packets constituting a communication flow to be monitored by looking up a condition matching with the data contained in the header of incoming packets from among the pre-registered conditions for identifying communication flows to be monitored;

starting to acquire statistics data on the identified communication flow to be monitored when detecting the start of communication in the packets constituting the communication flow to be monitored; and

on the occasion when said switch detects the end of the communication in the packets constituting said identified communication flow to be monitored, sending a packet partially including the locally obtained statistics data to the adjoining packet switch placed downstream in the route across which the packets constituting said identified communication flow to be monitored have passed and commanding said adjoining packet switch to collect the statistics data on said identified communication flow to be

monitored, locally obtained by said adjoining packet switch.

2. The method of monitoring a network according to claim 1, wherein:

said packet partially including the locally obtained statistics data belongs to said identified communication flow to be monitored.

3. The method of monitoring a network according to claim 1, wherein:

said condition out of said pre-registered conditions for identifying communication flows to be monitored includes at least either the source address/destination address or service type contained in the packet header.

4. The method of monitoring a network according to claim 1, wherein:

said statistics data on said identified communication flow to be monitored includes at least one of the number of packets constituting said communication flow to be monitored that passed through said packet switch, the count of bytes of the packets constituting said communication flow to be monitored that passed through said

packet switch, the number of discarded packets of the packets constituting said communication flow to be monitored, and the number of packets constituting said communication flow to be monitored that passed through said packet switch per unit time.

5. In a method of monitoring a network which comprises a plurality of packet switches and a network management system for managing the packet switches, a packet switch placed in the core of the network, performing the following steps:

detecting the start of communication in packets constituting a communication flow to be monitored by looking up a condition matching with the data contained in the header of incoming packets from among the pre-registered conditions for identifying communication flows to be monitored;

starting to acquire statistics data on the identified communication flow to be monitored when detecting the start of communication in the packets constituting the communication flow to be monitored; and

on the occasion when said packet switch receives the packet partially including the statistics data collected by the packet switch through which the packets constituting said communication flow to be monitored have passed and

which is placed on the one end boundary of said network, incorporating the locally obtained statistics data into said packet received and sending said packet to the adjoining packet switch placed downstream in the route across which the packets constituting said identified communication flow to be monitored have passed.

6. The method of monitoring a network according to claim 5, wherein:

said packet received belongs to said identified communication flow to be monitored.

7. The method of monitoring a network according to claim 5, wherein:

said condition out of said pre-registered conditions for identifying communication flows to be monitored includes at least either the source address/destination address or service type contained in the packet header.

8. The method of monitoring a network according to claim 5, wherein:

said statistics data on said identified communication flow to be monitored includes at least one of the number of packets constituting said communication flow

to be monitored that passed through said packet switch, the count of bytes of the packets constituting said communication flow to be monitored that passed through said packet switch, the number of discarded packets of the packets constituting said communication flow to be monitored, and the number of packets constituting said communication flow to be monitored that passed through said packet switch per unit time.

9. In a method of monitoring a network which comprises a plurality of packet switches and a network management system for managing the packet switches, a packet switch placed on the other end of the network, performing the following steps:

detecting the start of communication in packets constituting a communication flow to be monitored by looking up a condition matching with the data contained in the header of incoming packets from among the pre-registered conditions for identifying communication flows to be monitored;

starting to acquire statistics data on the identified communication flow to be monitored when detecting the start of communication in the packets constituting the communication flow to be monitored; and

on the occasion when said packet switch receives the packet partially including the statistics data collected by the packet switches through which the packets constituting said communication flow to be monitored have passed and which are placed on the one end boundary of said network and in the core of said network respectively, incorporating the locally obtained statistics data into said packet received and sending said packet to said network management system.

10. The method of monitoring a network according to claim 9, wherein:

said packet received belongs to said identified communication flow to be monitored.

11. The method of monitoring a network according to claim 9, wherein:

said condition out of said pre-registered conditions for identifying communication flows to be monitored includes at least either the source address/destination address or service type contained in the packet header.

12. The method of monitoring a network according to claim 9, wherein:

said statistics data on said identified communication flow to be monitored includes at least one of the number of packets constituting said communication flow to be monitored that passed through said packet switch, the count of bytes of the packets constituting said communication flow to be monitored that passed through said packet switch, the number of discarded packets of the packets constituting said communication flow to be monitored, and the number of packets constituting said communication flow to be monitored that passed through said packet switch per unit time.

13. In a method of monitoring a network which comprises a plurality of packet switches and a network management system for managing the packet switches, a packet switch placed on one end boundary of the network, performing the following steps:

detecting the start of communication in packets constituting a communication flow to be monitored by looking up a condition matching with the data contained in the header of incoming packets from among the pre-registered conditions for identifying communication flows to be monitored;

starting to acquire statistics data on the identified communication flow to be monitored when

detecting the start of communication in the packets constituting the communication flow to be monitored; and on the occasion when said switch detects the end of the communication in the packets constituting said identified communication flow to be monitored, sending a packet partially including the locally obtained statistics data to the adjoining packet switch placed upstream in the route across which the packets constituting said identified communication flow to be monitored have passed and commanding said adjoining packet switch to collect the statistics data on said identified communication flow to be monitored, locally obtained by said adjoining packet switch.

14. The method of monitoring a network according to claim 13, wherein:

said packet partially including the locally obtained statistics data belongs to said identified communication flow to be monitored.

15. The method of monitoring a network according to claim 13, wherein:

said condition out of said pre-registered conditions for identifying communication flows to be monitored includes at least either the source



address/destination address or service type contained in the packet header.

16. The method of monitoring a network according to claim 13, wherein:

said statistics data on said identified communication flow to be monitored includes at least one of the number of packets constituting said communication flow to be monitored that passed through said packet switch, the count of bytes of the packets constituting said communication flow to be monitored that passed through said packet switch, the number of discarded packets of the packets constituting said communication flow to be monitored, and the number of packets constituting said communication flow to be monitored that passed through said packet switch per unit time.